

# The Future of Travel – effects on communities, streetscapes and recreation

Prof Simon Kingham

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## Plan

- Future societal challenges
- The future of transport
- Impacts of future transport
  - Health
  - Lifestyle
  - Leisure and recreation
  - Communities
- Shaping and visioning the future

## Ministry of Transport Outcomes



## Transport

Movement of people and things

Access to

- Employment
- Recreation
- Social support
- Health services
- Raw materials
- Products
- Markets

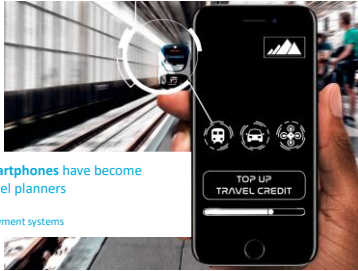


## Future societal challenges

- Safety
- Climate change
- Congestion
- Sprawl
- Health/wellbeing – obesity and mental health
- Community
- Social equity

## The future of travel

## Smartphones



Smartphones have become travel planners

+ payment systems



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## Smartphones

Challenge	Impact
Safety	😞
Climate change	😞
Congestion	😞
Sprawl	😞
Obesity & mental health	😞
Community	😞
Social equity	😞 Smartphone use lower in low SE groups



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## Electric Vehicles



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## Electric Vehicles

Challenge	Impact
Safety	😞
Climate change	😄 Low/zero emissions
Congestion	😞 Cheaper fuel means more travel
Sprawl	😞 Cheaper fuel means more travel
Obesity & mental health	😞 Cheaper fuel means more travel
Community	😞 Quiet
Social equity	😞 Newer cars more expensive



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## Flying cars



and

## Hyperloops



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## Hyperloops, flying cars etc

Challenge	Impact
Safety	😞 Hopefully
Climate change	😄 Low/zero emissions
Congestion	😄 Less road based vehicles
Sprawl	😞 People can travel further faster
Obesity & mental health	😞 Cheaper fuel means more travel
Community	😞
Social equity	😞 Probably not cheap



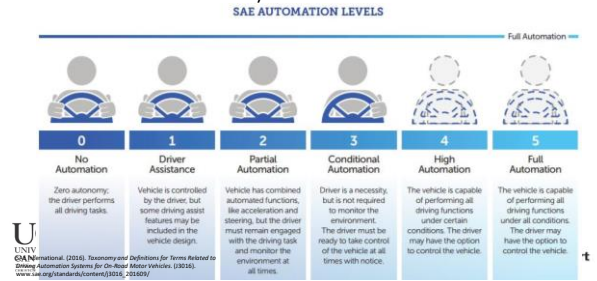
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## Autonomous vehicles



## Levels of Automation



## Autonomous vehicles

Challenge	Impact
Safety	Reduced human error
Climate change	More use -> newer fleet
Congestion	Efficient driving but more travel?
Sprawl	Travel time no longer negative
Obesity & mental health	Door to door
Community	Door to door
Social equity	Variations in service quality for lower SES?

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## Self-driving cars could lead to mobile brothels

The future could be really different.

By Shawn Knight on November 8, 2018, 5:29 PM | 8 comments



<https://www.techspot.com/news/77330-self-driving-cars-could-lead-mobile-brothels.html>

## Micromobility



## Characteristics of micromobility

- Light
  - Under 500 kg
- Motorised, generally electric
  - "Bicycling isn't micromobility but add a motor and it is"
- Utilitarian
- Available to be shared

Just e-Scooters?



Just e-Scooters?



Just e-Scooters?



Just e-Scooters?



Just e-Scooters?



Just e-Scooters?



## Micromobility

Challenge	Impact
Safety	😬
Climate change	😊 Less vehicles, less emissions
Congestion	😊 Less vehicles, first and last 100m?
Sprawl	😬 ????
Obesity & mental health	😬 Less active travel?
Community	😊 More social interaction
Social equity	😬 Variations in service quality for lower SES?

## Mobility as a service



## Mobility as a service

Challenge	Impact
Safety	😊 More use -> newer fleet
Climate change	😊 More use -> newer fleet
Congestion	😊 Individual journey decision -> less SOV
Sprawl	😊 Individual journey decision -> less SOV
Obesity & mental health	😬 Reduction in active travel?
Community	😬 Reduction in active travel?
Social equity	😬 Variations in service quality for lower SES?

## electronic Road User Charges (eRUC)

Currently

- 50% fuel excise
- 50% RUC

Move away from fuel excise to full eRUC

- Distance

## electronic Road User Charges (eRUC)

- Network efficiency/manage congestion
- Potential for variable trip cost by time and space
- Could encourage alternative modes
- 'Track' dangerous driving (e.g. speed)

## electronic Road User Charges (eRUC)

Challenge	Impact
Safety	😊 Dangerous drivers caught!
Climate change	😊 Variable charging e.g. emissions
Congestion	😊 Variable charging
Sprawl	😊 Variable charging
Obesity & mental health	😊 More active travel, walkable communities
Community	😊 More social interaction
Social equity	😊 Variable charging

## Active travel



## Living Streets Aotearoa



## Active travel

Challenge	Impact
Safety	
Climate change	
Congestion	
Sprawl	
Obesity & mental health	
Community	
Social equity	

## So what might happen?



## Challenges

- Climate change
- Obesity
- Congestion
- Mental health
- Community breakdown

## Future travel

- Smartphones
- Shared mobility
- eRoad User Changing
- Micromobility
- EVs and AVs

→  
Safer and/or more  
'Managed' streets



## Cities and streets

- 25-60 % urban land is motor vehicle infrastructure



## What are streets for?

- A street is a public thoroughfare in a built environment ..... on which people may freely assemble, interact, and move about.
- The word street is still sometimes used colloquially as a synonym for road ..... but city residents and urban planners draw a crucial modern distinction: a road's main function is transportation, while streets facilitate public interaction

- Wikipedia





## Healthy Streets™

- A street that works for people is a street that is good for health
- Towns and cities everywhere are facing the challenge of keeping communities healthy and happy
- Healthy Streets™ is an evidence-based approach for creating fairer, sustainable, attractive urban spaces
- Developed and used by Transport for London (TfL)

<https://healthystreets.com/>



## Traffic and community

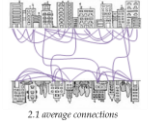


### LIGHT (< 500 vpd)



"We have great neighbours and live in a safe street"  
"I enjoy talking with my neighbours"

### HEAVY (8,400-14,000 vpd)

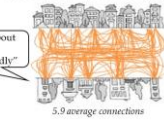


"My street is a car thoroughfare"  
"Lived here over 35 years, a decline in people talking to neighbours and children playing"

**Re-working Appleyard in a low density environment: An exploration of the impacts of motorised traffic volume on street livability in Christchurch, New Zealand.**  
Wiki J., Kingham S., and Banwell K.

World Transport Policy and Practice  
Volume 24.1 Mar 2018

### MODERATE (1400-2500 vpd)



"Most people get out and about and talk on the street"  
"Family-orientated and friendly"



## Christchurch research

- What can we learn about community (incl streetscape) from post-earthquake Christchurch
- Interviews with residents, leaders, stakeholders
  - Density, Socio-economic status, accessibility, environment, urban form
- Results
  - Geography – clearly defined
  - Local leaders
  - Housing stability



Karen Banwell



## Streets

- Intimate streets – cul-de-sacs, laneways, back sections
  - "Our street is wide so we don't know each other"
  - "People get into their cars and go to work and then come home press the little button for their garage door and they go inside to their private spaces never once turning around"



## Streets

- Intimate streets – cul-de-sacs, laneways, back sections
  - "Our street is wide so we don't know each other"
  - "People get into their cars and go to work and then come home press the little button for their garage door and they go inside to their private spaces never once turning around"
- Walkable – safe, attractive and connected
  - "Because walking somewhere you see people and that is really important to us to see people and have that eye contact and being human together"
  - "It can take a long time to get to the shops unlike the places with fences and garages"
- Green – presence of trees



Christchurch



## Proximity and urban design

- Local - community hubs, library, pools, parks, recreation areas
  - "If you have to get in your car it's not local"
- Bumping places - schools, shops, street furniture
  - "The school was the only bumping place for Phillipstown and then the Ministry closed it, the constancy in the children's lives. The Ministry did not see the school as a community hub or the importance for the community"
- Gathering places - churches, pubs, cafes
  - "It's hard for people to engage with each other when you don't have a meeting place to come together"



## Bumping spaces



Vancouver (Simon Kingham)



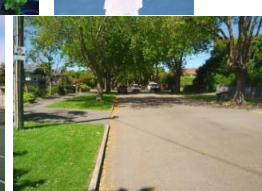
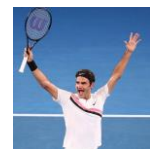
## Bumping spaces



Christchurch (Alan Jamieson)



## Dilemma 1





## Dilemma 2



## Streets for community and recreation

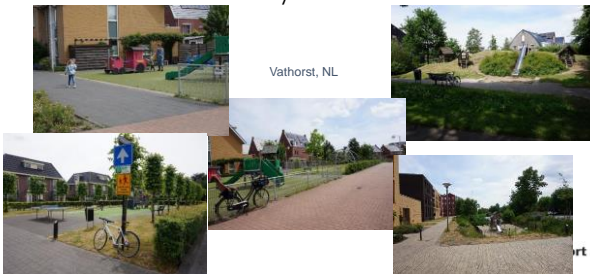
Port Almere, NL



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## Streets for community and recreation

Vathorst, NL



## Streets for community and recreation

Houten, NL



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## Streets for community and recreation

Heidelberg Bahnstadt, Germany



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## Streets for community and recreation

Vauban, Freiburg, Germany



## Streets for community and recreation

Riselsfeld, Freiburg, Germany



## Not new

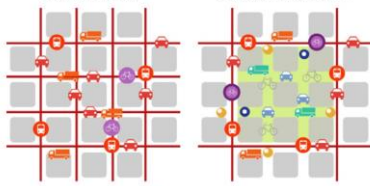


port

## Barcelona Superblocks

Current Model

Superblocks Model



- PUBLIC TRANSPORT NETWORK
- BICYCLES MAIN NETWORK (BIKE LANE)
- BICYCLES SIGNPOSTS (REVERSE DIRECTION)
- FREE PASSAGE OF BICYCLES
- PRIVATE VEHICLE PASSING
- RESIDENTS VEHICLES
- URBAN SERVICES AND EMERGENCY
- DUM CARRIERS
- DUM PROXIMITY AREA
- ACCESS CONTROL
- BASIC TRAFFIC NETWORK
- SINGLE PLATFORM (PEDESTRIANS PRIORITY)

port

## Barcelona Superblocks



port

## Barcelona Superblocks

IMAGE BEFORE



IMAGE AFTER



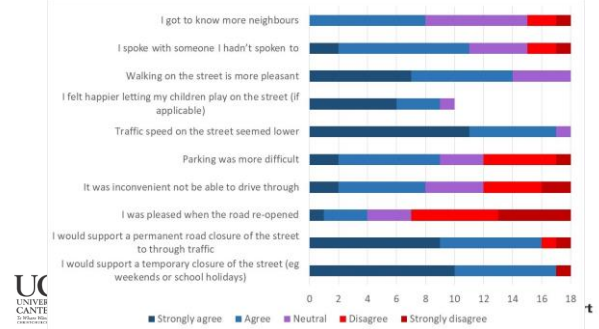
<https://www.publicspace.org/works/project/1081-poblenou-s-superblock>



## In New Zealand?



In New Zealand?



But!

### Street Smarts: Should Stapleton Kids Be Playing in Our Streets?

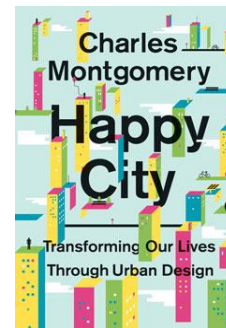
Staff Writer



A recent hot topic on Next Door Stapleton was the issue of kids playing in Stapleton streets. "It starts to really slow down traffic," says resident Josh Meyers. "I mean, you have to drive about 10 miles per hour in fear a kid is going to dart out in front of you. It can sometimes add anywhere from 30 to 60 seconds to a trip." Other

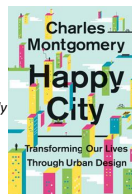
parents are less worried about the drive time, but worried about the inherent danger of kids playing in the busy Stapleton streets. "We're not living in a suburb, after all," says Stapleton parent Allie Morgan. "We live in Denver, in what is considered an urban community. Urban communities have lots of traffic, among other dangerous things. People need to get their kids out of the streets. If anything, have them play in the alleys."

<http://stapletonion.com/posts/treet-smarts-should-stapleton-kids-be-playing-in-our-streets/>

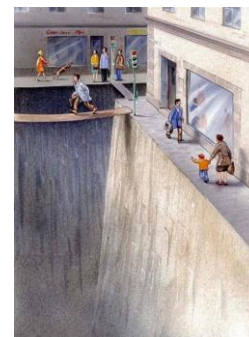


### Happy Cities

psychotic disorders, including schizophrenia, are most common in neighbourhoods with the thinnest social networks  
the more connected we are with family and community, the less likely we are to experience colds, heart attacks, strokes, cancer and depression  
connected people sleep better at night. They are more able to tackle adversity. They live longer. They consistently report being happier  
low-density sprawl puts residents at greater risk of arthritis, chronic lung disease, digestive problems, headaches & urinary tract infections



### Streetspace







So what might happen -  
A technology-driven future?  
... transport technology dictates the future



## Or A technology-enhanced future? ... a vision that uses transport technology



transport



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## Final thoughts

- Streets are not just for motor vehicles
- Local streets can, & should, be community & recreation spaces
- Traffic speed and volume are key deterrents to community & recreational uses
- Need shift in thinking about streetspace
- Need a vision for how we want our cities/communities to be
- Transport as our servant not our master



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